



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,323	02/18/2004	Paul Mantz	AGX-78	9445
22827	7590	05/16/2006	EXAMINER	
DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			OKEZIE, ESTHER O	
			ART UNIT	PAPER NUMBER
			3652	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/781,323	Applicant(s) MANTZ, PAUL	
	Examiner Esther O. Okezie	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-100 is/are pending in the application.
- 4a) Of the above claim(s) 3, 17 and 21-100 is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/19/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species IV in the reply filed on 12/12/2005 is acknowledged. The traversal is on the ground(s) that the species are generic to one another. Species I-IV are generic to one another and therefore should be considered a single species. This is not found persuasive because the species are clearly distinct.

It is well established practice that a requirement to elect a single species is a holding by the examiner that the plural species as claimed are patentably distinct (capable of supporting separate patents). See MPEP §808.01(a) and MPEP §809.02(a). If applicant is of a different view, applicant need merely state on the record that the species are not patentably distinct. Neither the examiner nor the applicant needs to present any reasoning. Note, species that are not patentably distinct are obvious in view of one another

Claims 17,21-34,37-41,44-49,53,54,57-70,72,73,76-100 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

Claims 35,36,42,43,50,51,52,55,56,71,74,75 are also withdrawn because they depend upon withdrawn claims. Claim 3 is withdrawn because it is drawn to subject matter not described in elected species IV.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1,2,4-7,9,10,13-16,19 are rejected under 35 U.S.C. 102(b) as being anticipated by Bacchi et al US 6,275,748.
2. Re claim 1, Bacchi et al discloses an endeffector for handling semiconductor wafers comprising: a base member (10) having a proximal end (20) and a distal end (22), the base member having a top surface (10s) configured to receive a semiconductor wafer; a plurality of support members (24,26) located on the top surface of the base member, the plurality of support members being configured to contact a wafer received on the top surface; a pushing device for positioning a wafer on the base member, the pushing device comprising a retractable piston (52) configured to contact an edge of a semiconductor wafer, the piston being movable between an extended position and a retracted position; a biasing member (155) placed in association with the piston, the biasing member biasing the piston towards its retracted position; and a pneumatic actuator (151) in operative association with the piston, the pneumatic actuator being configured to receive a pressurized gas that is used to overcome a force being applied to the piston by the biasing member and move the piston from the retracted position to an extended position (col. 5, lines 62-67; col.6, lines 1-40).

Art Unit: 3652

3. Re claim 2, a contact element (50) positioned on an end of the piston for contacting a semiconductor wafer, the contact element having a flat surface.
4. Re claim 4, the piston is maintained in a bearing assembly (154) positioned downstream from the pneumatic actuator, the bearing assembly preventing particles generated during movement of the piston from contacting a semiconductor wafer held on the base member (bore 154 is sealed with airtight seals 158).
5. Re claim 5, biasing member comprises a spring (155).
6. Re claim 6, the force applied to the piston by biasing member increases as the piston is extended (col.9, lines 31-51)
7. Re claim 7, the pneumatic actuator is connected to a first gas line (64) and a second gas line (66), the actuator including a driving member(60), the first gas line being configured to feed a gas into the pneumatic actuator for moving the driving member out of the pneumatic actuator and the second gas line being configured to feed a gas into the pneumatic actuator for retracting the driving member, the driving member being connected to the piston (col. 6, lines 1-24).
8. Re claim 9, at least one sensor (80,82) for sending the position of the piston
9. Re claim 10, the pushing device is at the proximal end of the the base member (fig 2; col. 10, lines 8-19).
10. Re claim 13, at least one backstop member (34) located on the base member generally opposite the pushing device, wherein the backstop member has a height sufficient for a wafer to be held in between the backstop member and the piston when the piston is at least partially extended (figs 3,4,8).

Art Unit: 3652

11. Re claim 14, the base member includes a first tine (188) spaced from a second tine (190), the first and second tines terminating at the distal end of the base member, each of the tines including at least one backstop member (134).
12. Re claim 15, the biasing member and the pneumatic actuator are contained in a housing (airtight bore 154) defined by the base member (fig 8).
13. Re claim 16, at least certain of the support members (arcuate rest pads 124,126) comprise a surface configured to only contact an edge of a semiconductor wafer, the surface having a convex and eccentric shape (col. 8, lines 41-57; fig 9).
14. Re claim 19, a pair of backstop members (134) are positioned at the end of each tine, each pair of backstop members surrounding a corresponding support member (124), each backstop member having a height greater than the height of the corresponding support member (figs 3 and 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bacchi et al in view of Lee et al. Bacchi discloses an airtight seal (158) for bore (154) in which the piston moves under gas pressure. Bacchi does not disclose a suction device positioned adjacent the pneumatic actuator, the suction device being configured to create a suction

Art Unit: 3652

force for capturing any particles that are released during movement of the piston. Lee et al discloses a semiconductor wafer transferring device including a particle discharging unit (92) including a suction unit and particle filter (96) for cleaning the air in order to limit contaminants exposed to a semiconductor wafer (paragraphs 104-105). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the end-effector of Bacchi et al to include a suction device for filtering out contaminants as taught by Lee et al in order to prevent contaminated air from the gas vents from reaching the semiconductor wafer.

16. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bacchi et al. Bacchi et al does not disclose the height of the endeffector. Bacchi et al does disclose the end effector is adapted for retrieving and replacing wafers from closely spaced apart wafer cassettes (14) and is so shaped to be slender enough to fit between close spaced wafers (col. 10, lines 8-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to design the end effector according to dimensions for passing between closely space wafer cassettes.

Allowable Subject Matter

Claims 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Art Unit: 3652

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Esther O. Okezie whose telephone number is (571) 272-8108. The examiner can normally be reached on Mon-Thurs 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EOO 3/5/06



EILEEN D. LILLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600